NIGHT PHOTOGRAPHY THEME LANGLEY CAMERA CLUB APRIL 2011 HINTS, TRICKS AND TIPS

A fascinating subject we have to work with.

Some of the information I have included in quite technical for you techies and some of it is pre-digital times, but the principles, of course, still apply.

It's that time of year when you leave for work in the dark and return home in the evening in the dark, so it's understandable that your camera may only surface at the weekend. But it doesn't have to be this way. Many cameras, whether compact 35mm, digital or SLR, have a shutter speed range that will allow low-light pictures to be taken so you can venture out in the evening. The only requirement is a little knowledge of metering and some form of support to ensure that you don't get blurred pictures as a result of camera shake.

Use a slow shutter speed at a fairground instead of flash and your pictures will be a wash of vivid colours. Here the static bulbs are complimented with a whirling collision of colour from the revolving ride. The low angles and creative viewpoint has helped here. Try to aim for a speed that blurs but just There is a range of illuminated scenes that are similar wherever they are photographed so we can give exposure values that you can use as a guide in the table below. We'll base the *enough so you can still see detail. Here 1/8th sec was just right.*

Here are some BASIC guidelines on the table below for some exposures fordifferent illuminated scenes that are similar wherever they are photographed. These are settings for an ISO of 100 but often you will want to adjust that way higher.

Fireworks	1sec	f/2.8
Floodlit building	1/2sec	f/2.8
Subject lit by firelight	1/2sec	f/2.8
Typical street scene with normal illumination	1/2sec	f/2/8
Shop window	1/8sec	f/2.8
Brightly lit street scene (maybe with Christmas lights)	1/15sec	f/2.8
Neon sign and brightly lit theatre districts	1/30sec	f/2.

If using film then Use these exposure settings as a guide and when using ISO 400 speed reduce the aperture down by two stops, so f/2.8 becomes f/5.6, or increase the shutter speed by two full settings, so 1/2sec would be 1/8sec.

Neon lights, whether Las Vegas or the local amusement arcade, provide excellent colourful subjects. Take care not to meter off one of the bright lights or the rest of the scene will be too dark. Also avoid metering from a dark area or the lights will be over exposed. Try to fill the frame with an interesting crop. A telephoto lens helps if the lights are at the top of a building or structure.

One final thing to be aware of is colour casts on colour film. Most film is created to take good pictures in bright daylight so when you shoot under artificial light you will get a colour cast. If the lighting is tungsten the colour will be yellow, and in fluorescent light it will be green. Filters are available to screw onto the lens of an SLR camera and can be held over the front of a compact camera.

Once again digital cameras have useful ways around this. Look on the menu of a many digital cameras and there's a white balance control. This is set to auto by default and can be fooled when the lighting is a mixed, so there's an override where you can preset the type of lighting you're shooting in. Some cameras just have a series of presets - shop windows and underground lighting is usually fluorescent, while floodlit buildings, street lamps and interiors of stately homes will often be tungsten. Some of the more advanced models have a manual setting where you point the camera at a white part of the scene so it can tell what colour light is reflected and compensate perfectly. You can take the shot and preview to check you're happy with the colouring. You don't have to filter the light to obtain daylight

colouring. *Church interiors will be very yellow if you don't add a filter or adjust the digital camera's white balance. Here the shot has been deliberately left to show the warm colour against the cold blue evening light coming through the window.*

London at Dusk

Once the sun has set many photographers will pack away their cameras and go home. They are missing out capturing some of the most stunning and visually exciting images to be had. Taking photographs at night is a lot simpler to achieve then one might think. The results can be very stunning and strange effects are easy to master. It is also possible to take top quality night images with just basic equipment. With many night photography subjects, total darkness at night isn't necessarily the best time to actually do 'night shots'. Late dusk is usually the preferred time. This is when there is just a bit of light left in the sky after sunset or before sunrise for the early rising photographer.

The advantage of shooting at this time is less large areas of black in the image, this cuts down on excessive contrast and adds more colour to the image. The residual daylight that is left will also 'fill in' the large shaded areas that are not lit by artificial lighting.

This does not mean that all night shots should be taken at dusk. There are certain subjects and night photography techniques that are more successful with the total darkness of night.

Night photography refers to photographs taken outdoors between dusk and dawn. Night photographers generally have a choice between using artificial light and using a long exposure, exposing the scene for seconds or even minutes, in order to give the film enough time to capture a usable image, and when photographing with film, compensating for reciprocity failure. With the progress of high-speed films, higher-sensitivity digital image sensors, wide-aperture lenses, and the ever-greater power of urban lights, night photography is increasingly possible using available light.

A LITTLE HISTORY

Early night photograph of the Luna Park, Coney Island, from the Detroit Publishing Co.collection, 1905.

In the early 1900s, a few notable photographers, Alfred Stieglitz and William Fraser, began working at night. The first photographers known to have produced large bodies of work at night were Brassai and Bill Brandt. In 1932, Brassai published Paris de Nuit, a book of black-and-white photographs of the streets of Paris at night. During World War II, British photographer Brandt took advantage of the black-out conditions to photograph the streets of London by moonlight.

By the 1990s, British-born photographer Michael Kenna had established himself as the most commercially successful night photographer. His black-and-white landscapes were most often set between dusk and dawn in locations that included San Francisco, Japan, France, and England. Some of his most memorable projects depict the Ford Motor Company's Rouge River plant, the Ratcliffe-on-Soar Power Station in the East Midlands in England, and many of the Nazi concentration camps scattered across Germany, France, Belgium, Poland and Austria.

During the beginning of the 21st century, the popularity of digital cameras made it much easier for beginning photographers to understand the complexities of photographing at night. Today, there are hundreds of websites dedicated to night photography.

Subjects for Night Photography

- *Celestial bodies (See astrophotograpy.)*
  - ✓ *The moon, stars, planets, etc.*
- *Streets with or without cars*
- *Abandoned buildings and artificial structures that are lit only by moonlight*
- *City skylines*
- *Factories and industrial areas, particularly those that are brightly lit and are emitting smoke or vapour*
- *Fireworks*
- *Nightlife or rock concerts*
- *Bodies of water that are reflecting moonlight or city lights*
  - ✓ *Lakes, rivers, canals, etc.*
- *Thunderstorms*
- *Amusement rides*

The length of a night exposure causes the lights on moving cars to streak across the image

Technique and equipment.

- A tripod is usually necessary due to the long exposure times. Alternatively, the camera may be placed on a steady, flat object e.g. a table or chair, low wall, window sill, etc.
- A shutter release cable or self timer is almost always used to prevent camera shake when the shutter is released.
- Manual focus, since autofocus systems usually operate poorly in low light conditions. Newer digital cameras incorporate a Live View mode which often allows very accurate manual focusing.
- A stopwatch or remote timer, to time very long exposures where the camera's bulb setting is used.

[edit]**Long exposures and multiple flashes**

The long exposure multiple flash technique is a method of night or low light photography which use a mobile flash unit to expose various parts of a building or interior using a long exposure.

This technique is often combined with using coloured gels in front of the flash unit to provide different colours in order to illuminate the subject in different ways. It is also common to flash the unit several times during the exposure while swapping the colours of the gels around to mix colours on the final photo. This requires some skill and a lot of imagination since it is not possible to see how the effects will turn out until the exposure is complete. By using this technique, the photographer can illuminate specific parts of the subject in different colours creating shadows in ways which would not normally be possible.

The practice of photographing at night goes back to some of the first photographers. Technical limitations (slow film speed, large camera size, the large wet plates that were used, etc.) severely hampered efforts in this area of photography. However, from the early 1900's on more and more night photographs can be seen. Stieglitz, Brassai, Genthe, Steichen - all have made some notable images that were nocturnal. Stieglitz and Steichen's studies of the Flatiron Building in New York are widely recognized images. Brassai's studies of Paris after dark were classics of this relatively new (at the time) genre. Many of the photographers aligned with the Surrealist movement in the 20's and 30's, did work at night and many of their "non-night" prints evoke the nocturne. The Englishman Bill Brandt also photographed at night, revealing wartime and post war industrial England. And even his darkly printed images of non-night images have a dark, nocturnal feel to them. Lee Miller, a woman photographer during WWII made some interesting night images, the most famous perhaps, being the burning of Hitler's house, photographed at night with a GI looking on as a cold, detached onlooker. Even Ansel Adams, in probably his most famous (and notorious) image, "Moonrise over Hernandez" used the blanket of dusk, moonlight, and a darkened sky to convey a sense of mystery and place.

Who's Doing It

While almost every photographer has at least attempted a "night shot" at some time or other, a relatively small number have devoted their photographic and creative skills exclusively to photographing at night. In the late 1970's on the West Coast more and more work (a lot in color) began to surface by photographers such as Steve Harper, Richard Misrach, Arthur Ollman and others. Steve Harper began teaching college level courses and workshops dealing exclusively with night photography or "Night Light". As a result, a substantial body of work was done in Night Photography by photographers from the Bay Area in the 1980's and continues to be done today. Michael Kenna moved here from England and through most of the 80's focused on night photography, also offering workshops on the subject. Arthur Ollman went on to head the Museum of Photographic Arts in San Diego, where the exhibition, "Night Light, A survey of 20th Century Night Photography" is currently appearing.

Timing

While a "true" night photograph would be taken an hour or so after dark, excellent results can be obtained at dusk or shortly after. The overall light is a more even balance of artificial and natural light and the mood is definitely of the night. Thus, exposures for night photographs range from a few seconds to ones that are 5 to 8 hours in length. The latter exposure time would generally take place in a traditional landscape setting, far from urban areas (and any ambient light).

Exposure

Reciprocity failure refers to the breakdown in the relationship of exposure (time/aperture) to the density build-up in the negative or transparency. Normally films react with predictable results in this regard. When exposures run much beyond the normal range of the film - let's say 1/500 second down to 1/4 of a second, adjustments need to be made.

Suggested reciprocity failure factors: (Tri-x)Meter Reading	***x-factor of***	***= corrected exposure***
1 sec.	*1.5*	*1.5 sec.*
2 sec.	*2.0*	*4 sec.*
3 sec.	*2.5*	*7.5 sec.*
4 sec.	*3.0*	*12 sec.*
10 sec.	*5.0*	*50 sec.*
20 sec.	*6.0*	*2 min.*
40 sec.	*7.0*	*4 min. 40 sec.*
80 sec.	*8.0*	*10 min. 40 sec.*
10 min.	*11.0*	*2 hours*

Specifics

Keep accurate records of all exposures. You learn from your mistakes as well as your successes. Don't go out each time, only to have to "re-learn" the basic info that you need. Night photography as a learning experience is cumulative, much like the exposures involved. A sample exposure log is included.

- *Invest in a timer with an audible signal, and maybe built in illuminance.*
- *Get a good industrial strength "Thermos" (unbreakable) for warm drink. It gets cold out there after an hour or so!*
- *Consider a MagLite flashlight as well as a small pocket flashlight. The MagLites are focusable and come in various power/brightness ratings, depending on number of power cells used. You can "light" a whole night scene with one!*

The following article I just enjoyed reading so much that I had to include it!!!!!

THE GHOST PHOTOGRAPHER OF BATEMAN, SASKATCHEWAN

by Larrie Thomson

I've had several late night encounters with other nocturnal folk over the years I've been night shooting. Some have posed significant danger and at least once, I wondered if I would meet my end while night shooting. Occasionally though, a situation comes along that is also pretty funny. Such is the story of The Ghost Photographer of Bateman, Saskatchewan.

September 1, 2001 - Day two of the September road trip . . . Bateman, Saskatchewan was a rare find. I honestly didn't think a place like this existed anymore. An entire abandoned town, intact, with blocks of residential, a main street business strip, two churches, a curling rink, but no people. In fact the last resident left in the fall of 2000.

Service Station, Bateman, Saskatchewan

I had scouted Bateman earlier in the day. It easily had potential for a full night of shooting. I arrived back about 9:30 PM, pulling the Starving Artist Van in alongside an abandoned wreck at the service station. "Good place for it", I thought. After two days of bouncing over dusty gravel roads in 100 degree heat the rusty old 81 Dodge fit right in with its surroundings. Perfect! "Stealth mode". I grabbed my gear and set out to shoot up the town. It was a beautiful evening for night photography, with interesting and varied sky conditions and temperatures still in the high 70's on the Fahrenheit scale. I shot one of the churches, worked a bit of residential area on the west side of town, then headed to the eastern edge to shoot a spectacular abandoned brick school. Nights like this are why I go night shooting! Sheer heaven.

I heard a vehicle approaching in the distance along the gravel road. It struck me as

unusual since I'd had the entire town to myself all evening. I checked my watch. 1:30 AM. I had just finished light painting a shot and was waiting for the exposure to finish under the moonlight. I continued to listen. The sound of the vehicle neared -- then silence. That bothered me. It was awfully late, and what's more, nobody lives here! I figured I'd better head back and check on the van.

As soon as the exposure was complete I gathered my gear and made my way through the dark, silent residential streets back to the center of town. As I rounded the corner by the old fire hall I saw the car. It was an older Monte Carlo. Yup, I had company! There were five of them and they were vandalizing the town. They had knocked over a wooden sign and were presently trying to throw a car battery through the window of fire hall. I stood and watched in the shadows, not quite sure what to do.

I was almost certain that I couldn't be seen where I was standing. Then one of them happened to look my way. Suddenly he sort of jumped and did a double take. I'd been spotted. He went over to the others. "Hey, there's a guy over there!" I dropped to the ground behind the tall grass. I was out of view but I could see them perfectly. They were all looking my way. "No, seriously! There was a guy . . . Just standing there!" A couple of minutes passed as they looked past me toward the dark row of houses and back at each other.

Main Street, Bateman, 2 am

After several minutes they seemed to have discounted the mysterious sighting and moved down the street to the service station. This time they were throwing rocks at the windows. They were literally feet from the Starving Artist Van and I was beginning to get concerned. I moved quietly through the residential streets, down another block and across the main street when they weren't looking. I approached again to within a block, this time on the same side of the street. Actually, I've been in much, much, more dangerous situations, and if I chose to sacrifice the van and its contents this predicament posed no danger at all. I didn't like that option though. Practically everything I own was in there! On the other hand, the idea of a chicken night shooter like me taking on five vandals in the middle of nowhere seemed foolish. Night photography is risky enough at the best of times. I like the idea of returning from these road trips with the same number of teeth and all my internal organs still on the inside, thank you!

Townpump, Bateman

So, what to do? Confront them, or hide and potentially lose the van and all my gear? Was there another option? There was, actually. It was a long shot but it freaked them out once already so it was worth a try again. Banking on fear of the unknown to help balance the five against one odds, I stepped out of the shadows onto the street. The moon was directly behind me, as I stood motionless in silhouette against the distant prairie horizon. Several minutes passed without them noticing. It seemed like hours. Then the same guy who saw me last time happened to glance down the road. Even a block away I could see his startled reaction when he spotted me. I stood perfectly still. He sort of "squeaked" to the others. In a moment all five of them were standing beside the old Monte Carlo, staring at me. I stared straight back at them and didn't move a muscle.

I wasn't sure what they were thinking at that point. Myself, I was thinking something like "Oh crap! Now I've really done it. There's no going back now..." More tense seconds passed as the standoff continued. Then a very cool thing happened. Almost simultaneously, they turned and looked at each other, turned back to look at me, back to each other again. Without saying another word, each one made a scramble for the nearest door, the driver threw it into gear and they burned out of there in a cloud of oil smoke, dust and gravel! I had the town to myself for the rest of the night.

I'd love to know what they thought they saw. I can only begin to imagine the impact of thinking you are all alone in a desolate, abandoned place miles from anywhere, then suddenly seeing a human form in the distance. ...Especially when that form seems to appear and disappear at will. This is the stuff from which urban legends are made! I walked back down the deserted streets toward the old brick school as the tension of the moment melted into relief, then amusement. I think I chuckled out loud recalling the look on the driver's face as he peeled away. 'Yup, this town is safe once again, thanks to the Ghost Photographer of Bateman, Saskatchewan.'

Larrie Thomson lives in Edmonton, Alberta ------ This is another great article.

One clear November night, while walking in the woods below my house in New Hampshire, I realized that the moon was so bright that I could turn off my flashlight and continue on unaided. I started to wonder why, if I could see clearly enough to walk through the forest, I couldn't photograph that same forest under similar conditions. The simple fact is that landscapes **can** be photographed using moonlight, provided you learn a few important techniques and have the right equipment for the job. Just as your eyes adjust to moonlight and allow you to see almost as well as in daylight, a camera can do a very good job exposing film using only the light of the moon.

My house--as seen that night

There is a big difference between daylight images and those taken using the moon's light. The extended period of time required to expose an image at night allows and forces the camera to capture elements of landscapes that the brain is unable to comprehend under normal circumstances. The contours and patterns, the aspects of light and how it interacts with a scene, look vastly different when a subject's rapid change and motion are captured on film -- not as an instant in time, but as 10, 15, or even 40minutes in time.

Over the last few years, I have worked at developing the techniques and determining what equipment is necessary for

achieving success in this very different type of nature photography. This article gives a brief primer on the equipment, techniques, and new ways of thinking necessary to effectively photograph landscapes illuminated only by the light of the moon.

Composition is vitally important to moonlight photography, as it is to all photography. I will not dwell upon the usual "rules" of composition, many of which by necessity apply to this process. There are additional rules that apply specifically to landscape staken by the light of the moon.

The first is to avoid placing too much sky in your pictures. The sky has almost no albedo, or reflectivity. In addition, there are numerous light sources found in the sky -- planets, stars ,airplanes, the moon, UFOs, and the like -- which will not only effect your exposure, but may also create unpleasant bright streaks through your image. If you are shooting near an urban area, the sky will likely be very bright due to light pollution. Flight patterns may bring airplane lights through your image. I try to keep the sky to a minimum in nighttime photographs, unless I know that there will be little light interference.

Great Falls, VA

It is useful to try to include in your images subjects with a variety of albedo. I like to shoot rocks, trees and other plants, and especially water. Rivers and streams with waterfalls or rapids are ideal for moonlight photography because the water reflects different amounts of light depending upon how it moves. A scene which includes still water, a waterfall or rapids, and a shore of some type works well. I have also had wonderful results with the beach, especially with large breaking waves, due to the various characters of light reflected in different parts of the scene. Shadows cast by objects are valuable in illustrating the difference between moonlight and daylight in your images.

Bracket your exposures. The likelihood of properly exposing your first attempt at moonlight photography is almost zero. All of the rules that you have been taught, your light meter and probably the light meter in your camera, are useless to you now. You may want to test the ability of your camera to correctly expose your images. Although no manufacturer will claim to have programmed its camera to deal with exposures much longer than 15 seconds ,the camera doesn't always know that! I have found that my F3 occasionally comes close to correctly exposing images of an almost unbelievable length of time; yours may too. Despite this, do not count on your camera to properly expose your nighttime images.

Always set your lens to its fastest aperture, focusing on infinity(unless you are shooting a detail and have used your light to focus upon it). With your camera on a sturdy tripod, an appropriate composition framed within your viewfinder, your lens wide open and focused out, and a cable lock attached to your shutter mechanism, you are ready to start taking pictures.

Taking the pictures

Make your first exposure approximately 2 minutes, your second around 5, your third around 10, and take a fourth for about 15 minutes. Clearly, time constraints will prevent you from taking more than a few different pictures until you learn the character of the light where you are shooting. The amount of water or rocks in your frame will greatly effect the length of your exposures; the more high-albedo objects or surfaces, the less time you will need (snow is the best!).

Unlike daytime photography, a few seconds of exposure either way is negligible. If you miss the time you specified to stop your exposure, it is not a catastrophe. When dealing with 10-20minute exposures, it takes entire minutes to alter the exposure noticeably. Experiment with the length of exposure your first few times out. Write down the length of each exposure consistently; this will help you identify "typical" exposure times for various light and scenery qualities.

Those crazy rods and cones

During the day, your eyes rely primarily upon the cones in the retina, seeing the world in color. As the sky darkens at night, the rods in your retina take over most of the work of vision ,and you begin to see the world in white, gray, and black. What you see in the landscape is not what your camera and film will capture .Color slide film always sees in color, regardless of what the photographer perceives with her brain.

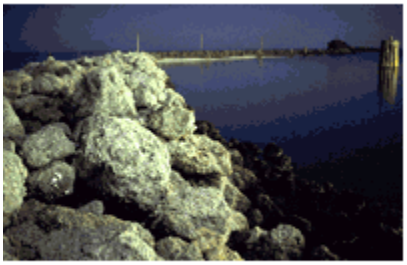
Ajo Mountains
Organ Pipe Cactus National Monument

The leaves of trees that you perceive as gray will be green to your camera, if exposed long enough. As in the daytime, still water reflects the color of the sky over it. Moving or falling water becomes a bright white reflection of the moon's light. Rocks are still gray, while wood is brown. Flowers, if their blossoms are open, are the same color they would be in daylight, even though you perceive them to be gray. Shadows of moonlight are often more blue-tinted than those of daylight. The light falling upon everything is much whiter, less yellow, than the light of the sun .All of these hues are invisible to you as you look at the scene through your viewfinder. Your brain sees shades of gray where there is in fact a myriad of colors waiting to be released onto your film with extremely long exposures. None of the colors can be perceived by your brain at night, but your camera will capture them for you if you let it.

Be aware that clouds in the sky will greatly affect this particular photographic pursuit. Do not be afraid of skies with partial clouds, but do determine beforehand where the clouds will be in the sky in relation to the moon. If they will obscure its light substantially, consider another night. Clouds create color and tonal differences in moonlight photographs, and if they do not obscure the moon, they can create very interesting effects. Increase the

time of each exposure by several minutes on nights when the moon shines through thin clouds.

Moonlight on my mind



Breakwater, Cedar Island, NC

Photographing landscapes by the light of the moon is not something that should be attempted by people who need to see quick results. Hours will be spent taking only a few images, with uncertain results. In your first outings, while you learn about super-long exposures and the compositional elements within them, you are likely to have few great images. But you will see in those images a world that is entirely different from the one you perceive when you look at it – in daylight or at night. As a photographer who strives to see and capture the beauty present in the natural world, I think that one of the greatest rewards is to see, to discover, a new beauty that had been hidden.

It has taken me years to develop confidence in my ability to walk into a landscape in the dark and photograph it effectively. With the appropriate tools, technical knowledge, techniques, and patience, I learned -- and so can you. All photography is trial and error, and relies upon a faith that what you "see" is what will turn up on your processed film. There is a great difference that I must reemphasize here: ***What you see is not what you will get when you photograph using the light of the moon***. You get something that you will begin to see only after you have "gotten" it. The greatest worth of this technique may be that in addition to capturing beautiful images on film(perhaps reward enough), you are likely to learn a new way of perceiving nature and the processes active within it.

Composition is vitally important to moonlight photography, as it is to all photography. I will not dwell upon the usual "rules" of composition, many of which by necessity apply to this process. There are additional rules that apply specifically to landscapes taken by the light of the moon.

Can My Camera Do Night Photography? DIGITAL!!

For successful night photography you need a digital camera that allows you to keep the shutter open for a long time, anywhere from 3 to 30 seconds. Check your camera specifications in the User's Manual under Shutter Speed. The shutter speeds available will be given as a range, e.g. 30 sec. - 1/2,000 sec.

Shooting Modes

For an image to be captured by a digital camera's image sensor, the latter requires exposure to light. But at night, light is what we don't have enough of.

Some of you may have noticed that, if you select a shooting mode of Auto (A) or Program Auto (P), your night pictures always come out too dark. They are simply underexposed. But, why is that -- if your camera's shutter speed ranges from, say 10 sec. to 1/2,000 sec.?

Go back to your camera's User's Manual and look a bit more carefully. Are all the shutter speeds available in Auto or P mode? Ah-ha, many digital cameras (we're talking consumer models here) do not make the whole shutter speed range available in A and P mode! Perhaps the slowest shutter speed available in A and P mode is only as slow as 1/3 sec. That's usually not long enough for night photography. To access the longer shutter speeds, you may need to select one of the other shooting modes, e.g. Shutter-Priority, or even switch to full Manual mode.

So ensure that your digital camera has full Manual mode and allows access to the full range of slow shutter speeds in that mode.

Self-Timer & Remote Controller

Another feature that you want your digital camera to have is a self-timer or, ideally, a remote controller. The purpose is to allow you to depress the shutter release button without introducing camera shake. I particularly like the remote controller, but not every camera comes with one or even has one available optionally.

But almost all, if not all, cameras has a self-timer. Usually the self-timer counts down from 10 sec. I find that a bit long to wait, especially since you would need to take more than one shot and it's minus 10 with the wind chill outside. The cameras that additionally provide a 2 sec. self-timer have my nod of approval here.

Tripod

A mandatory accessory that you need is a sturdy tripod. When you let the shutter stay open for a long time, the camera needs to be kept rock steady, otherwise you end up with blurred images.

Examples

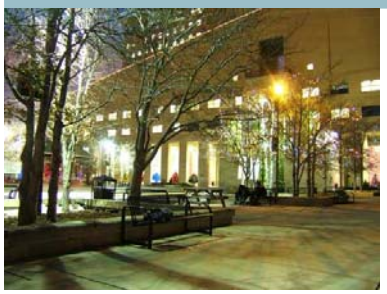
OK, so we have our digital camera and tripod, and are ready to venture forth into the night in search for interesting night shots. When we find one, we set up camera and tripod, frame and... what do we do now?

Well, the images below show what happens when you take the same shot using P mode, then in Manual mode with various different shutter speed/aperture combinations, all in search of the correct exposure. The camera was on a tripod for all three shots.

Fujifilm FinePix E550
7.2mm, Programmed Auto, Pattern
Shutter Speed 1/4 sec., Aperture F2.8, ISO 80

In the above example, the camera uses the slowest shutter speed and largest aperture available in P mode and at the widest focal length. The picture is underexposed.

Manual Mode - Overexposed

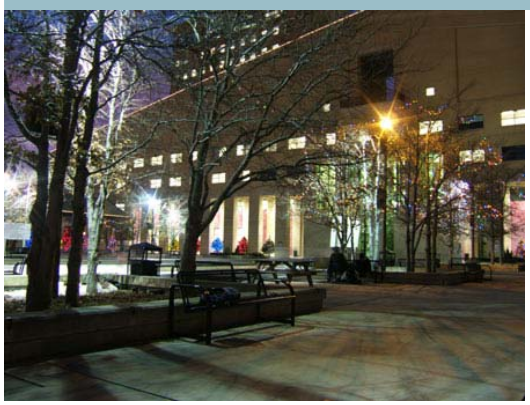


Fujifilm FinePix E550
7.2mm, Manual, Pattern
Shutter Speed 3 sec., Aperture F2.8, ISO 80

Switching to Manual mode allows me to access the slowest shutter speed available on this camera, 3 sec. while keeping the aperture at F2.8 (the largest aperture available). The effect is immediately better, but it does seem a bit too bright, giving almost a daylight effect. If this is the effect you're after, then you're done. But if you wanted to capture the night mood, read on.

Now it is just a matter of adjusting the shutter speed and/or aperture to obtain the desired exposure. I choose to close down the aperture so as to increase the depth of field also.

Manual Mode - Correct Exposure



Fujifilm FinePix E550
7.2mm, Manual, Pattern
Shutter Speed 3 sec., Aperture F4.0, ISO 80

Closing down the aperture to F4.0, a more pleasant image is obtained with enough dark areas to indicate it is night time (dusk, really) and enough lighted areas to reproduce what my eyes saw at the outdoors skating rink at the Mississauga Civic Center.

ISO

For the three pictures above, I used ISO 80, the lowest ISO available for best image quality. But what if at 3 sec. and F2.8 (i.e. at max. exposure possible for this particular camera), the image still came out too dark? In this case, I would need to increase the sensitivity of the image sensor to a higher ISO. Do note that increasing the ISO also increases the amount of noise visible in your images.

Technique

Take a number of shots at different shutter speed/aperture combinations. Immediately review the shot as soon as you've taken it.Ensure your LCD brightness is set to Normal, not Bright, for a truer representation of your recorded image. A good aperture to start with is F4.0 or F5.6 (for greatest depth of field), and adjust shutter speed up or down until you're satisfied with the shot.

For good measure, take an extra shot past your optimum exposure setting. For example, if you were progressively using longer shutter speeds, and you think you've find the correct one, take an extra shot with the next longer shutter speed. Conversely, if you were using progressively faster shutter speeds, take an extra shot using the next faster shutter speed.

Some thoughts on night photography

In the daytime our vision and minds work together to produce generally "ordinary" views of our world. At night our vision and perceptions are less secure, become questionable. This allows the night photographer a great latitude in visualising and actually producing images. In night photography colour and contrast are often very different from daytime, sometimes the complete opposite of our normal experience. This allows us to see our world with new, almost alien eyes. Additionally at night we can see deep into space, and the awe we feel and the grandeur we see hopefully infuses our images.

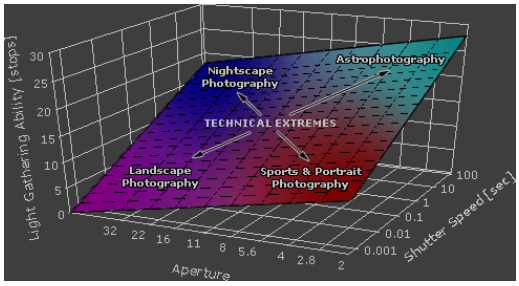
Night photography is about mystery. One powerful justification for photography in general is that it encourages the discipline to look hard enough to see the hidden wonder all around us. Night photography in particular rewards this discipline because of its inherent concern with difference. Time, colour, darkness, location, technology, personal vision, solitude all combine in new and personal ways everytime the night photographer goes out.

Photographic technology is constantly changing, and this has had an enormous impact on night photography. Film had an entirely different emphasis and texture to digital capture. For years I learned to love the grain, atmosphere and palette of push processed transparency film. Nowadays I am more impressed by the speed, tonality and sharpness of digital night photography. Speaking entirely personally, with the advent of superb digital SLR cameras (dating in my view from the release of the stunning Canon 5D Mk2), there is little reason to carry on using film at night. The night photographs on this site effectively reflect the changeover from film to digital. Modern digital cameras can produce images we could only dream of as recently as the turn of the century.

For me a night photography trip is a purifying, simple and highly personal experience. This feeling of simplicity and purity is emphasised by my solitude on site. A promising night photography location is like a theatre set when everyone has gone home, the location and atmosphere draws extra power precisely because people are absent, either "safe" locked up in well lit homes and cities, or lost in the past. I am therefore mostly interested in night photography away from direct electrical lights, I want to avoid suggesting the presence of others nearby. I like to explore the loneliness of night. That is not to say I can escape the lights entirely, living on a small island I must come to terms with the inevitable light pollution from city lights, so I am often paradoxically exploring country locations against the backdrop of urban skyglow. My work sometimes feels like a conservation of what remains of mood and atmosphere before England totally fills up with roads, hastily built housing and office blocks. Then Night in its true sense will be forgotten, and we as a culture will be even further cut off from our real identity.

After my years of night photography it is no mystery to me that our prehistoric ancestors, in many times and places, aligned markers of stone with the stars. My work has shown me that subconsciously I have the same obsession with uniting the landscape and sky. I believe that is why so many of my images attempt to join dark earthly silhouettes with the unattainable sky above. Trees, churches and other elements replace stones as markers, for me mysteriously giving meaning and accessibility to the stars beyond. For that reason my work is landscape not astronomical photography.

NIght photography has the ability to take a scene and cast it in an unusual light — much like the "golden hour" surrounding sunrise and sunset can add an element of mood and uniqueness to a sunlit scene. Just as how sports and landscape photography push the camera's limits for shutter speed and aperture, respectively, night photography often demands technical extremes in both (see below).

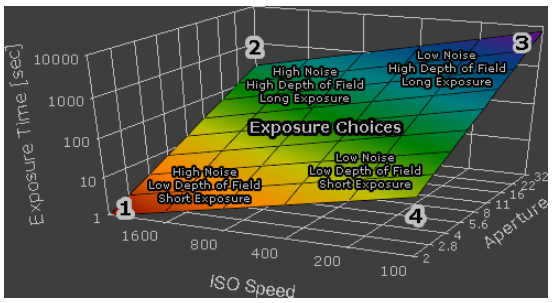


Due to lack of familiarity and since night photos are often highly technical, many photographers simply put their camera away and "call it a day" after sunset. This section aims to familiarize the photographer with obstacles they might encounter at night, and discusses how to surmount many.

Night photography is subject to the same set of constraints as daylight photography — namely aperture, shutter speed and light sensitivity — although these are all often pushed to their extremes. For this reason, the abundance and diversity of night photography has been closely tied to the advance of photographic technology. Early film photographers shied away from capturing night scenes because these require prohibitively long exposures to maintain adequate depth of field, or produced unacceptable amounts of image noise. Furthermore, a problem with film called "reciprocity failure" means that progressively more light has to reach the film as the exposure time increases — leading to diminishing returns compared to shorter exposures. Finally, even if a proper exposure had been achieved, the photographer would then have to wait for the film to be developed to assess whether it had been captured to their liking — a degree of uncertainly which is often prohibitive after one has stayed up late and spent minutes to hours exposing each photo.

Fortunately, times have changed since the early days of night photography. Modern digital cameras are no longer limited by reciprocity failure and provide instant feedback — greatly increasing the enjoyment and lowering the risk of investing the time to take photographs at odd hours.

Even with all these advances, digital night photography is still not without its technical limitations. Photos are unavoidably limited by the trade-off between depth of field, exposure time and image noise. The diagram below illustrates all available combinations of these for a typical night photo under a full moon, with constant exposure:



Note the trade-off incurred by moving in the direction of any of the four scenarios above. Most static nightscape photos have to choose between scenarios 2, 3 and 4. Each scenario often has a technique which can minimize the trade-off; these include image averaging, stacking and multiple focal planes (to be added). Also note how even the minimum possible exposure time above is one second — making a sturdy camera tripodessential for any photos at night.

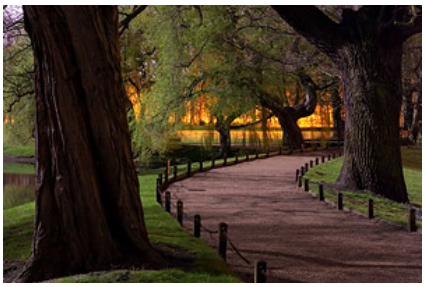
The diagram does not consider additional constraints: decreased resolution due to diffraction and increased susceptibility to fixed pattern noise with longer exposures. Fixed pattern noise is the only disadvantage to progressively longer exposures in digital photography (other than also possibly being impractical), much like the trade-off of reciprocity failure in film. Furthermore, moon movement and star trails (see below) can both limit the maximum exposure time.

Just as how daylight photographers pay attention to the position and angle of the sun, night photographers should also pay careful attention to the moon. A low-laying moon can create long shadows on cross-lit objects, whereas an overhead moon creates harsher, downward shadows.

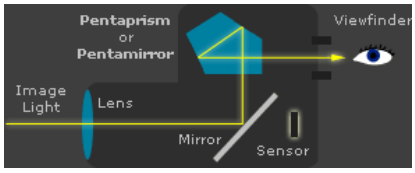
An additional variable is that the moon can have varying degrees of intensity, depending where it is during its 29.5 day cycle of waxing and waning. A full moon can be a savior for reducing the required exposure time and allowing for extended depth of field, while a moonless night greatly increases star visibility. Furthermore, the intensity of the moon can be chosen at a time which provides the ideal balance between artificial light (streetlamps) and moonlight.

Gauging exposure times during a full moon can be tricky;**use f/2.0 and 30 seconds at ISO100 as a starting point** (if subject is diffuse and directly lit), then adjust towards scenarios 1-4 accordingly.

Another factor rarely noticed during daylight is movement of the light source (sun or moon). The long exposure time required for moonlight photography often means that the moon may have moved significantly over the course of the exposure. Moon movement softens harsh shadows, however too much movement can create seemingly flat light.

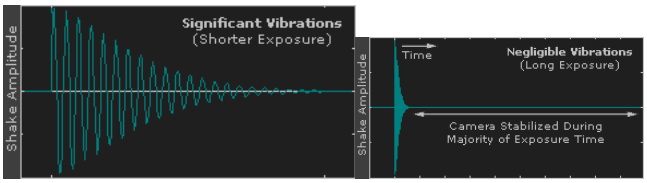


Note how the 1 minute exposure above clearly shows high contrast and shadows from even the smaller branches, whereas the 4 minute exposure is at lower contrast and only shows the larger branches. The choice of exposure time can also vary by much more than a factor of four — greatly exaggerating the above effect.Shots which include the moon in the frame are also susceptible to moon movement. A rule of thumb is that **the moon appears to move its own diameter roughly every 2 minutes**. As a result, it can quickly appear elongated if this exposure time is approached.Properly composing your photograph in the viewfinder can be problematic when there is little available light. **Even if you intend to expose using a small aperture, a lens with a large maximum aperture can greatly increase viewfinder brightness** during composure. To see the effect of different apertures, manually choose an aperture by pressing the "depth of field preview" button (usually located on camera at base of lens).



The way a SLR camera redirects light from the lens to your eye can also affect brightness. Cameras with a pentaprism (as opposed to pentamirror) ensure that little light is lost before it hits your eye, however these often increase the cost of the camera significantly. Larger format sensors also produce a brighter viewfinder image (such as full frame 35 mm, compared to 1.5-1.6X or smaller crop factors) . Finally, ensure that you give ample time for your eyes to fully adjust to the decrease in light — especially after standing in stronger light or using a flashlight. Mirror lock-up (MLU) is a feature available in some SLR cameras which aims to minimizecamera

shake induced by mirror-slap (which produces the characteristic snapping sound of SLR cameras). It works by separating the mirror flip and aperture opening into two steps. This way, any vibrations induced by the mirror have time to settle down before the exposure begins.



Mirror lock-up can drastically increase sharpness for exposure times comparable to the settling time of the mirror (~1/30 to 2 seconds). On the other hand, mirror shake is negligible for exposures much longer than this; therefore **MLU is not critical for most night photography**. When forced to use wobbly tripods (never desired) or long focal lengths, the stabilizing time can increase significantly (~8 seconds).Even modestly long exposures can begin to reveal the rotation of stars in the sky. Using a longer focal length and photographing stars far from the north star increase the distance stars will move across the image. This effect can create a dizzying look, however sometimes these streaks detract from the artistic message if stillness and tranquility is the desired look.

Normal focal lengths (28-50 mm) usually have minimal star movement if exposures are no longer than about 15-30 seconds. If star trails are desired, using a large aperture and higher sensitivity (ISO 200-400) can enhance the brightness of each streak.Proper focusing is critical at night because small apertures are often impractical — therefore one cannot afford to waste mispositioning the depth of field (see hyperfocal distance). To further complicate focusing, night scenes rarely have enough light or contrast to perform auto focus, nor enough viewfinder brightness to manually focus.

Fortunately there are several solutions to this focusing dilemma. One can try focusing on point light sources at a similar distance to the subject of interest. In the photo to the left, autofocus would be almost guaranteed by using the bright light at the bottom. The central focus point is more accurate/sensitive in many cameras, and so it is best to use this (instead of the outer focus points) — even if using it requires having to recompose afterwards.

If you wish to autofocus at infinity, just aim your camera at the moon, autofocus, then recompose accordingly. Alternatively, **bring a small flashlight since this can be set on the subject, focused on, and then removed before the exposure begins**. If all these approaches are impractical, one could always resort to manual focus using distance markings on the lens.

Night scenes which contain artificial light sources should almost always have low-key histograms, otherwise these will have significant blown highlights. Metering these can be tricky if the camera's auto-metering fails; a good starting point is to meter off of a diffuse object which is directly lit by one of the light sources. If all else fails, be sure to bracket each image, or zero in on the correct exposure by using guess and check with the rear LCD screen.

What is a proper exposure at night? Unlike during daytime where the basis is (roughly) a18% gray card, there is not really a consistent, commonly agreed upon way to expose night photos. One could "under-expose" to maintain the dark look of night, or could alternatively have the histogram fill the entire tonal range like a daytime shot. I generally recommend always fully exposing the image as if it were a daytime photo, and shooting in RAW mode. This way the exposure can always be decreased afterwards — while still maintaining minimal image noise because more light was collected at the digital sensor.

Black and white does wonders to convey the texture of weathered wood. This small web image doesn't do it justice but the detail in a photographic print is really quite striking. This is one of many disused houses in Hairy Hill. As tiny as it is, it appears to be sitting on a full basement.

I had just finished a nearby shoot and I was heading west along Highway 1, looking for a place to pull off and catch a few hours of sleep. It was late and I was tired but as I drove by the town of Qu'Appelle, I couldn't resist stopping to seize what might be my last opportunity to capture this amazing old building on film.

The Qu'Appelle community hall, like so much of the gorgeous early 20th century architecture in small town Saskatchewan, has a questionable future. I sometimes think about how few of the places I photograph that are still standing even a year or two later. It's sad, but makes the photos that remain that much more special.

Introduction to Night Photography

Just when the sun has set and you thought it was safe to go back to the couch after a hard day of shooting, suddenly night falls and a whole new world of subjects is illuminated. From the jack-o-lanterns on your neighbor's front step to the bright lights of Broadway to the neon signs at the local diner, the night is full of color and light and all you need to capture it is a tripod, a lot of memory card space and a pioneering spirit.

Finding nighttime and low-light subjects is pretty easy and even ordinary things you might not notice during the day can become quite interesting after dark--simple things like walk lights and even the local fast food joint are all worthwhile design ideas. If you want to get a little more adventurous and add motion to the nighttime mix, things like traffic patterns and carnival rides can turn into extraordinary images when combined with a long exposure. In summertime, almost every town and city has an annual fireworks display that provides great opportunities for night shots. And if you're really ambitious, you can create your own light and motion pictures with things like sparklers or flashlights.

In the tutorials below I'll introduce you to some of the very simple tips & techniques involved in shooting pictures after dark and I'll also talk about the specifics of some common after-dark subjects.

Ferris Wheel at Night

Neon Motel Sign

Basic Consideration: High ISO vs. Long Exposures?

Almost every time I take a night or low-light photograph I ask myself the same question: Should I use a longer exposure time and keep the ISO low to get better image quality, or should I raise the ISO so I can use shorter exposure times. The fact is that both higher ISO settings and long exposure times both lead to increased image noise, so it's really half a dozen of one and six of the other. I really don't mind noise in night photos, so I tend to give that issue minimal consideration (there are also some very good noise-reduction software programs available if you find that noise is affecting image quality). Noise tends to be more obvious with smaller-sensor cameras with high pixel counts--it's one of the prices you pay for having a lot of pixels on a small sensor. After all, noise is just that: digital interference from other nearby pixels: the closer they are and the more there are, the more noise you're going to get. This is why professional cameras often use full-frame CMOS sensors: larger pixels, better noise cancellation.

Your real primary consideration should be subject motion. Since you will be using a tripod a lot of the time (you will, won't you?), camera movement won't be an issue. Subject motion, however, is always a consideration. If you want to freeze action as much as possible, then shifting to a higher ISO will buy you a few more stops of shutter speed. On the other hand, very often exaggerating the motion of

nightlights (traffic streaks, fireworks, carnival rides) is a desirable thing and so using a slow ISO and a longer shutter speed is a good working combination. So, for me, the larger questions are always: Is there motion here and do how do I want to capture it?

There will be times when you're shooting without a tripod and you will be forced to raise the IS0, so go ahead and raise it. I had to raise the ISO to 1600 to photograph the famous Rose window in Notre Dame (9-04) because I was already using the fastest lens I had with me and tripods aren't allowed, so I simply had no choice. The image isn't as sharp as I would like, but in situations like this I always feel it's better to raise the ISO and suffer some digital noise than to simply stop shooting.

Regardless of whether you're increasing the ISO or using *subject* motion (as opposed to you intentionally jiggling the camera--which is perfectly acceptable if that's what you're after) as a part of the image, I still highly recommend using a tripod at night. A tripod opens up the entire range of shutter speed and aperture combinations and no anti-shake technology does that. (And by the way, in most cases when you use a tripod it's better to shut off your anti-shake system if you can.) Buy a tripod!

I shot this photo of the New London, Connecticut harbor using a very long 28-second exposure (at f/13) because I wanted to use a low ISO of 200 and because I wanted the natural flow of the water in the harbor to create a smooth sheen. If you look closely at the image you can see a red line going across (just at the water line of the schooner) horizontally--that's the red running light of a power boat that went by during the exposure. The overall color shift of the image is due partly to the "cloudy day" setting of the white balance and partly to the vapor lamps lighting most of the scene. Still, by using a careful curves adjustment, I was able to keep whites white (the boat, the tents, etc.).

Creative Night Photography Technique: Neon signs

Neon signs are one of my absolute favorite subjects--they're bright, they're colorful and a lot of them are very retro looking which I find fascinating. Photographing neon is incredibly simple because your matrix meter reading is usually very accurate and you can be off by a stop or two and you'll still get great photos. Most neon sings are also bright enough to shoot hand-held if you bump the ISO up to 400 or 800 and turn on the image stabilization. Personally I prefer to use a tripod and shoot at the lowest ISO available, but not everyone is nuts enough to haul a tripod with them to Las Vegas.

One strange little phenomenon you might notice as you photograph neon is that the halation from the tubes will grow or contract based partly on exposure time and the aperture you're using (I tend to use a small aperture of f/22 or smaller, mostly to keep everything in sharp focus). If you see too much of a glow, or too little, try altering your aperture (and your exposure time) and see if it cleans up the image a bit. Also, while I always take an overall shot of the sign, I also take various close-ups and try to create interesting abstract designs from the sign. Since the sign is just sitting there and digital pictures are free, I usually shoot at least several dozen images from different angles and distances, bracketing exposures if I'm not sure how the glow is being recorded. I spent about 20 minutes taking about 50 or 60 shots of the casino sign shown here.

Outdoor night concerts are another great time to flex your night-photo creativity. I photographed sax great Sonny Rollins on the New Haven, Connecticut green. In order to shoot in the dim light I had to raise the ISO to 1600. This shot is not a digital image; it was was shot on slide film and pushed during processing.

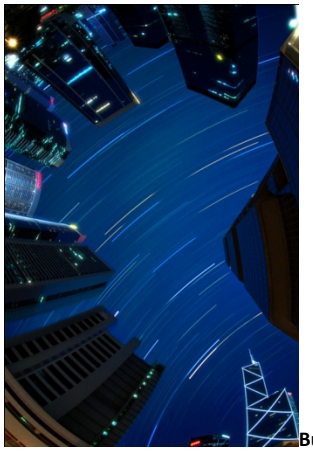
Creative Technique: Zooming

If you're looking for a fun way to add a twist to your night shots, consider the old "zooming" technique that was so popular back in the film SLR days. It's a simple technique and with digital, of course, you can see the results of your experiments right away. The technique is simple: just set a relatively long exposure (at least 1/15th second) and then zoom the lens from one extreme to the other during the exposure. Of course, the longer the exposure time the more time you have to experiment wiht zoom speed and whether or not you want to use the entire zoom range or just a part of it.

I shot this last summer in Times Square around midnight on a Saturday night. I used a zoom lens (18-70mm Nikkor) and rested the camera on a construction barrier while I zoomed the lens (tele-to-wide) for about a half second at f/13. You can really vary the effect by changing the speed of the "racking" of the zoom and whether you start at the tele or wide range (for some reason that makes quite a difference). Also, if you pause or jiggle the camera, you can get some cool effects. Yes, this is about a 1968 effect :) but it's still fun, especially when you have a subject like Times Square.

There's really no way to predict how your images will turn out and often you get little surprises that you can't anticipate. If you look at the left front edge of the Times Square photo, for example, you can read the "Mamma Mia" sign very clearly. That happened because I must have paused long enough at that particular portion of the frame to register the sign sharply. I also like that you can see faces in the streaks of light (look at the lower left) if you look carefully.

Beach at night



Buildings and Stars

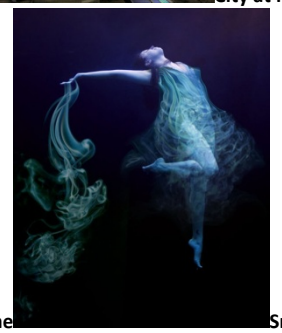
Canal at night.

City at night

Ghostly street

Coliseum

nighttime

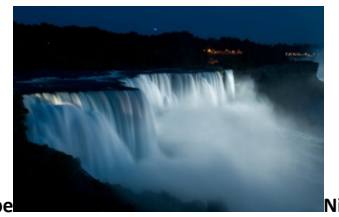


Smoke Art

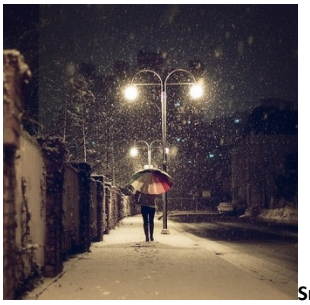
Fire at Night

Fireworks

Girl in Restaurant Light Bulb and Smoke Moon

Moonlit landscape  NiagaraFalls NorthernLightsIceland

Light Painting Q'Appelle Saskat.

 Snow at night Stars at night Thunderstorm

So Folks, that gives you some ideas to work on, to recollect shots you may have taken on similar themes or wondrous images that you will be taking in the next few weeks. Happy Shooting! And most of all HAVE FUN!!!!

Rianna